TOSHIBA

G7 APPLICATION GUIDELINE 8.0

Configuring Analog Inputs

Introduction

The G7 allows several parameters to be controlled by either a 4-20[mA] or 0-10[V] analog input. These parameters include upper limit frequency, acceleration/ deceleration time, and torque boost.

This application note will walk you through all of the steps necessary to configure the G7's analog inputs. The functioning of the controlled parameters will also be discussed.

Before starting, you should consider that several parameters might be controlled by a single input. Care should be taken to ensure that only the desired parameters are being controlled by the analog inputs, and that these parameters are being controlled in the appropriate manner

Connections
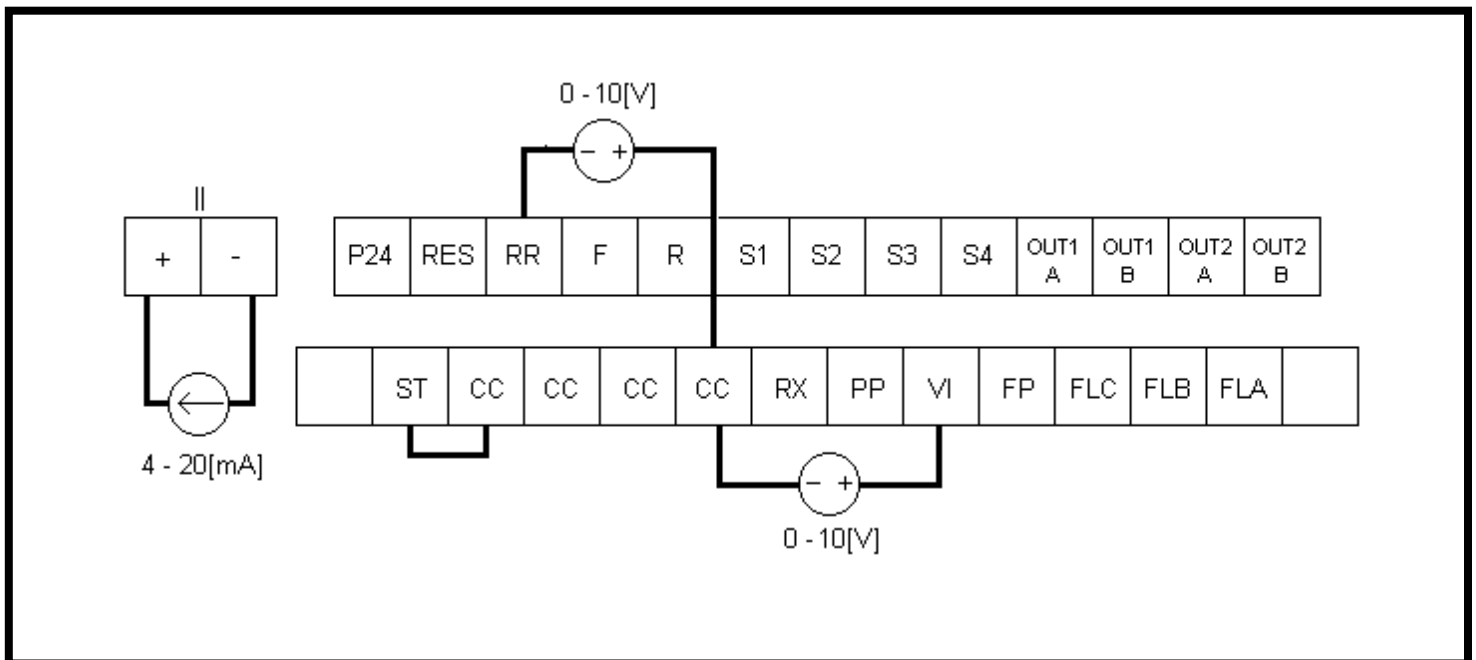
Programming

Parameter	Location	Default Value	New Value
Upper Limit Frequency Adjustment	Program → Terminal Selection Parameters → Analog Input Functions	Disabled	Use RR*
Acceleration Time Adjustment	Program → Terminal Selection Parameters → Analog Input Functions	Disabled	Use RR*
Deceleration Time Adjustment	Program → Terminal Selection Parameters → Analog Input Functions	Disabled	Use RR*

✍ For additional assistance, please contact Toshiba Adjustable Speed Drive Marketing Dept. at (800) 872-2192

Torque Boost Adjustment	Program → Terminal Selection Parameters → Analog Input Functions	Disabled	Use RR*

* The VI/II input terminal can also be used.

Notes

For upper limit frequency the analog input will limit the upper limit frequency in the range 0 - UL[Hz]. If the analog input receives 4[mA] or 0[V], the upper limit frequency will be 0[Hz]. If the analog input receives 20[mA] or 10[V] the upper limit frequency will be set by Upper Limit in Program → Fundamental Parameters →Frequency Settings. Intermediate inputs will result in a linear setting of the upper limit frequency by the formula

$$\text{Upper limit Frequency} = UL * \left(\frac{(X-4)[mA]}{24[mA]} Or \frac{X[V]}{10[V]} \right)$$

Where X is the input analog input in either mili-Amps or Volts. Note: accel/decel times are still calculated with reference to Maximum Frequency.

Acceleration/Deceleration Time Adjustment - The analog input will determine a multiplier to the Accel/Decel #1 parameters set in Program → Fundamental Parameters →Accel/Decel #1 Settings. With a minimum input resulting in a multiplier of 1 and a maximum input resulting in a multiplier of 10 with intermediate inputs giving a linear multiplier between 1 and 10.

Torque Boost Adjustment – The analog input will determine the percentage of Torque Boost that the drive will output at low speeds in a manner similar to that mentioned in the description of upper limit frequency discussed above.